



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/560,893

12/16/2005

Luca Boiero

09952.0014

2361

22852 7590 09/09/2008
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

NGUYEN, NGA X

ART UNIT

PAPER NUMBER

3662

MAIL DATE

DELIVERY MODE

09/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,893	Applicant(s) BOIERO ET AL.	
	Examiner NGA X. NGUYEN	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41,43-66,79,81 and 82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41,43-66,79,81 and 82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Withdraw of Indication of Allowance

1. The indicated allowability subject matter in the first action of claims 44-47, 49-53, 58-60 & 62-66 are withdrawn in view of the newly discovered reference(s). Rejections based on the newly cited reference(s) follow.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show descriptive labels for the boxes in Fig. 2. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

Art Unit: 3662

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 41, 43-49, 51, 54-62, 64, 79 & 81-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nir (2003/0224802) in view of Zhao (20030085838).

With regard to claim 41, 55, 79 & 81, Nir discloses:

- The mobile terminal both in a satellite-based positioning system and in a cellular communication system, whereby the mobile terminal is adapted to receive satellite signals from the satellite based system and to be covered by at least one cell of the cellular communication system (see page 2, paragraph 16-20)
- Determining at least approximately the coordinates of the mobile terminal based on both satellite signals from the satellite based system and information related to the cellular communications system (see page 2-3, paragraph 21-25).

Nir does not teach the altitude coordinate which is related to the cellular communication (base station). Zhao discloses:

- Determining at least approximately the coordinates of the mobile terminal based on both satellite signals from the satellite based system and information related

Art Unit: 3662

to the cellular communications system, wherein the coordinated include an altitude coordinate and deriving an estimate of the altitude coordinate from information related to an altitude of one or more network elements in the cellular communications system (see page 1-2, paragraph 17-20).

It would have been obvious to modify Nir by incorporating the teaching of Zhao's system that the cellular communication system having altitude coordinate so as the mobile terminal is enable to perform position information with 3D that based on GPS (two dimension) and an altitude that related to cellular network.

With regard to claim 44 & 58, Zhao teaches

- Identifying, in the cellular communication system, a plurality of base station adjacent to the mobile terminal, each said adjacent base station having a respective altitude coordinate (see page 1, paragraph 15).
- Determining the minimum/average of the altitude coordinate for the adjacent base stations (see page 1-2, paragraph 1)
- Using the minimum/average value as the estimate of the altitude coordinate (see page 2, paragraph 18)

With regard to claim 46 & 59, Zhao teaches

- Performing power measurements providing, for each said adjacent base station a respective power value for said mobile terminal (see page 2, paragraph 18)
- Determining said average value as a weighted average of the respective altitude coordinates values, the weighting being a function of said power values determined for each said adjacent base station (see page 2, paragraph 19)

Art Unit: 3662

With regard to claim 47 & 60, teaches that the positioning coordinates are determined in an iterative manner by subsequent location steps, a new refined estimate of the altitude coordinate being used at each step in the iterative process (see page 2, paragraph 20)

With regard to claim 56 & 82, Nir teaches:

- Providing a geographical data base comprising data base items associated with a given set of bi-dimensional positioning coordinates of the mobile terminal in the area corresponding to values for the altitude coordinate (see page 2, paragraph 21-25).
- Accessing the geographical data base via the mobile terminal whereby the positioning coordinates, as at least approximately determined by the mobile terminal based on the satellite signals (see page 2, paragraph 23).

With regard to claim 43 & 57, Zhao teaches:

- Identifying, in the cellular communications system, at least one base station proximate to the mobile terminal, the proximate base station having an associated altitude coordinate and using the altitude coordinate of the proximate base station as the estimate of the altitude coordinate (see page 1-2, paragraph 17).

With regard to claim 48 & 61, Zhao teaches:

- Providing an approximate bi-dimensional positioning of the terminal on the basis of the information related to the cellular communications system (see page 2, paragraph 18).

Nir teaches:

Art Unit: 3662

- Determining the positioning coordinates of the mobile terminal on the basis of the satellite signals by exploiting the two-dimensional positioning and the estimate of the altitude coordinate (see page 2, paragraph 20).

With regard to claim 49 & 62, Zhao teaches

- Initially determining a search area for positioning coordinates of said mobile terminal based on said satellite signals and the estimate of the altitude coordinate (see page 1, paragraph 14)
- Subsequently identifying the positioning coordinates within the search area based on information related to the cellular communications system (see page 1, paragraph 15-1)

With regard to claim 51 & 64, Zhao teaches

- Determining a 1st set of values for the location coordinate on the basis of the information related to the cellular communication system (see page 1, paragraph 14-15)
- Acquiring the satellite signals from the satellite based system and deriving therefrom an area likely to include the mobile terminal (see page 1, paragraph 14)
- Providing a new set of values of the location coordinates (see page 2, paragraph 20)
 - o Effecting based on the information related to the cellular communication system, a bi-dimensional positioning of the mobile terminal within said area likely to include the mobile terminal (see page 2, paragraph 18)

Art Unit: 3662

- Accessing a geographical data base and associating to the bi-dimensional positioning coordinates of the mobile terminal within said area a corresponding value for said altitude coordinate (see page 2, paragraph 20)

With regard to claim 54, Nir teaches determining at least approximately the coordinates based on satellite signals received from less than three satellites of the satellite based system (see page 2, paragraph 21).

4. Claim 50, 52-53, 63, 65-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nir and Zhao as applied to claims 49, 51 above, and further in view of Riley (2003/0125046).

With regard to claim 50 & 63, Riley teaches

- Determining the search area for positioning coordinate in the form of a hyperbolic set of points (see page 3, paragraph 36)
- Determining the positioning coordinates within the hyperbolic set of points by using the information related to the cellular communications system (see page 5, paragraph 54).

It would have been obvious to modify Nir and Zhao by incorporating the teaching of Riley's system to determining the positioning coordinate within the hyperbolic set of points so as the mobile terminal's location information is reported accurately and quickly.

With regard to claim 52-53 & 65-66, Riley teaches

- Determining the distance between the new set of values and the first set values (see page 7, paragraph 83)

Art Unit: 3662

- Comparing the distance with a threshold (see page 7, paragraph 83)
- If the distance is higher than the threshold, starting an iterative process (see page 7-8, paragraph 83-84).

Response to Amendment

5. Applicant's arguments with respect to claims 41, 43-66, 79, 81-82 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGA X. NGUYEN whose telephone number is (571)272-5217. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TARCZA H. THOMAS can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/560,893
Art Unit: 3662

Page 9

NGA X NGUYEN
Examiner
Art Unit 3662

NXN

/Thomas H. Tarcza/

Supervisory Patent Examiner, Art Unit 3662